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ABSTRACT

This study examined the extent to which the relative influence on college investment decisions of economic, academic, structural, social, and cultural capital varied by racial/ethnic group. Data from the third (1994) follow-up to the National Education Longitudinal Study of 1988 were used. The adjusted weighted sample included 11,933 individuals who graduated from high school in 1992. The study found that, on average, Blacks and Hispanics had less economic and academic capital than Whites. Black high school graduates were observed to have more of some types of social and cultural capital than high school graduates of other ethnic groups, in that they were more likely to express interest in earning advanced degrees, receive help from their high schools with college admissions materials, and use more than one tool to prepare for college admissions tests. After controlling for differences in economic, academic, structural, social, and cultural capital, the probability of enrolling in a four-year college or university in the fall after graduating from high school was 11 percent higher for Blacks than for Whites. The probability of enrollment was about equal for Hispanics and Whites. (Contains 33 references.) (MDM)

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DIFFERENCES IN THE DECISION TO ATTEND COLLEGE AMONG BLACKS, HISPANICS, AND WHITES

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Introduction

Over the past decade, the numbers of African American and Hispanic undergraduates enrolled in colleges and universities nationwide have increased by 32% and 98%, respectively, whereas the number of White undergraduates declined by 1% (Nettles & Perna, 1997). Similarly, the number of bachelor's degrees awarded increased by 43% for African Americans and 90% for Hispanics, compared with an 11% increase for Whites. Despite this progress, however, African Americans and Hispanics continue to be underrepresented among both undergraduates (10.0% and 8.0%, respectively) and bachelor's degree recipients (7.0% and 4.2%) relative to their representation in the traditional college-age population (14.3% and 13.7%).

Although much is known about the factors that affect college attendance, few researchers have attempted to examine differences by racial/ethnic group in the ways in which students decide to attend college (Hossler, Braxton & Coopersmith, 1989; Freeman, 1997). Such research is a necessary first step toward identifying the policies and practices that will increase the representation of African American and Hispanic students among postsecondary educational enrollments and degree recipients. Therefore, this study addresses the following question: How does the decision to invest in higher education vary among Blacks, Hispanics, and Whites?

Economic model of the decision to invest in college

Examinations of college-related decisions typically draw upon economic frameworks, sociological frameworks, or some combination of the two (Hossler et al, 1989). In this study, an economic framework is adopted and expanded to incorporate the central features of sociological status attainment models.

The decision to enroll in a four-year college or university may be viewed as an investment decision in which individuals determine whether the present value of perceived lifetime benefits exceeds the present value of perceived lifetime costs. Short-term consumption

benefits of attending college include enjoyment of the learning experience, involvement in extracurricular activities, participation in social and cultural events, and enhancement of social status. Future benefits include higher lifetime earnings, more fulfilling work environment, better health, longer life, more informed purchases, and lower probability of unemployment (Bowen, 1980; Leslie & Brinkman, 1988; McPherson, 1993). Costs of investing in a college education include the direct costs of attendance (e.g., tuition, fees, room, board, books, and supplies) less financial aid, opportunity costs of foregone earnings and leisure, and costs of traveling between home and the institution.

Economic models of decision making assume that individuals are rational actors who make decisions that maximize their welfare with respect to their personal preferences and tastes. When comparing two or more alternatives, a rational individual is expected to select the alternative that maximizes expected utility, where expected utility is the sum of expected current and future utilities (Manski and Wise, 1983; Hossler, et al, 1989; Paulsen, 1990). Factors that are expected to influence the decision to invest in higher education include financial resources, academic ability, current and expected labor market opportunities, personal preferences and tastes, and uncertainty (Becker, 1962).

Financial resources

Individuals are expected to consider their financial resources when determining the relative benefits and costs of investing in postsecondary education. For instance, low levels of financial resources may constrain a family's ability to pay the costs of the investment and realize benefits that exceed the costs. Educational attainment has been shown to increase with socioeconomic status (Alexander & Eckland, 1974).

Academic ability

Individuals are also assumed to consider their academic achievement and aptitude when making postsecondary education investment decisions. Low academic aptitude may reduce the probability that a student will successfully complete the educational program and obtain a job producing the expected future earnings premium. Individuals with greater ability are generally more likely than others to invest in higher education (Becker, 1962; Sewell, Haller & Ohlendorf, 1970; Alexander & Eckland, 1975; St. John, 1991).

Current and expected labor market conditions

Although the ways in which individuals form their expectations about future labor market opportunities has not been examined (Manski, 1993), research suggests that students realistically estimate the increase in earnings associated with completing additional formal education and that they accurately estimate differences in earnings profiles across major fields (McMahon & Wagner, 1981). Students appear to have realistic expectations and reasonable information about future labor market opportunities at the time they decide to enroll in college (Catsiapis, 1987).

Personal preferences and tastes

The concepts of social and cultural capital can be used to explain differences in individuals' preferences and tastes for investing in higher education. Like human capital and physical capital, social and cultural capital are resources that may be invested to enhance productivity (Coleman, 1988) and facilitate upward mobility (DiMaggio & Mohr, 1985; Lamont & Lareau, 1988).

Social capital may take the form of information-sharing channels and networks, as well as social norms, values, and expected behaviors (Coleman, 1988). Both social capital in the

family (e.g., relations among family members) and social capital in the community (e.g., relations among parents, parents' relations with institutions in the community) may influence educational attainment above and beyond the effects of financial and human capital (Coleman, 1988).

Lamont and Lareau (1988) define cultural capital as commonly shared, high status cultural signals that are used for social exclusion (e.g., from jobs and resources) and cultural exclusion (e.g., from high status groups). Signals include attitudes, preferences, knowledge, behaviors, possessions, and credentials and may function as informal academic standards, as well as characteristics of the dominant class. Individuals without the required cultural capital may: a) lower their educational aspirations or self-select out of particular situations (e.g., not enroll in higher education) because they do not know the particular cultural norms; b) overperform to compensate for their less-valued cultural resources; or c) receive fewer rewards for their educational investment (Lamont & Lareau, 1988).

With regard to higher education investment decisions, cultural capital refers to the value placed on obtaining a college education, as well as the information available about the means of acquiring a college education (DiMaggio & Mohr, 1985; McDonough, 1997). Cultural capital, measured as a composite of cultural activities, attitudes, and knowledge, has been shown to increase the frequency of interactions about postsecondary plans between high school students and "high-status" individuals, including teachers, school counselors, and peers (DiMaggio & Mohr, 1985).

Proxies for social and cultural capital that have been shown to be related to educational attainment include: educational aspirations (Sewell, Haller & Ohlendorf, 1970; Alexander & Eckland, 1974; Thomas, 1980; St. John, 1991). mother's expectations for the child's education (Jackson, 1990); parental encouragement (Alwin & Otto, 1977); encouragement from significant others (Sewell, et al. 1970; Thomas, 1980); peer expectations (Jackson, 1990); peer college plans

and behaviors (Alexander, Eckland & Griffin, 1975; Alwin & Otto, 1977; Nolfi, et al, 1978); ability to find role models (Arnold, 1993); interpersonal skills (Arnold, 1993); frequency of religious attendance (Borus & Carpenter, 1984); and strong self-concept and confidence in academic ability (Arnold, 1993).

Some research suggests the amount of social and cultural capital and in the ability to convert this capital into educational attainment differs among students of different social class and racial/ethnic groups (Lareau, 1987; Orfield, 1988; Wells & Crain, 1994). Based on her qualitative study of educational attainment among African American and Mexican American valedictorians, Arnold (1983) concluded that racial, class, and gendered social structures and cultural norms restrict educational attainment for minority students. In his analysis of college access in the Los Angeles metropolitan area, Orfield (1988) found that the percent of African American and Hispanic high school graduates who attended four-year colleges and universities declined during the early 1980's, while the percent of Asian high school graduates, many of whom were first generation college students, increased, suggesting cultural differences in the value of educational success across racial/ethnic groups. Based upon their review of 21 studies on the long-term effects of school desegregation, Wells and Crain (1994) concluded that attending school with students of other racial/ethnic groups provided access for African Americans to the information and sponsorship networks that are required for educational attainment. Occupational aspirations were not only higher for African Americans who attended desegregated rather than segregated schools, but were also more realistically related to educational aspirations. Educational attainment was higher, on average, for African Americans who attended desegregated schools than for African Americans who attended segregated schools.

Uncertainty

Decisions to invest in human capital (e.g., higher education) depend on the degree of uncertainty about the expected rate of return on the investment, such as the increase in earnings and status associated with college attendance (Becker, 1962). The amount of uncertainty surrounding college-related decisions may be reduced not only by social and cultural capital (e.g., access to information, membership in a community or family in which college education is valued) but also by organizational structures, such as characteristics of the high school attended.

Attending a four-year college or university is more likely to be "a given" for students who attend elite private high schools than for students who attend public high schools (Persell, Catsambis, & Cookson; 1992; McDonough, 1997). Compared with public high schools, private and Catholic high schools have a higher percent of students participating in academic curricular tracks and lower guidance counselor to student ratios (Falsey & Heyns, 1984; McDonough, 1997). After controlling for academic characteristics, socioeconomic background, and educational aspirations, students attending private high schools are more likely than their peers attending public high schools to enroll in college (Falsey & Heyns, 1984). Other structural factors that have been shown to be related to college enrollment decisions include: participation in an academic or college preparatory curricular track in high school (Alexander & Eckland, 1974; Alwin & Otto, 1977; Thomas, 1980; Borus & Carpenter, 1984; St. John, 1991); socioeconomic status composition of the high school student body (Boyle, 1965; McDonough, 1997); percent of minority students in the student body relative to the minority status of student (Borus & Carpenter, 1984); and the nature of guidance counseling (McDonough, 1997).

Research on racial group differences

The extent to which students of different racial/ethnic groups differ in the amounts and types of resources required for college enrollment has not been clearly established by prior research. Interviews with African American high school students about the barriers they perceive to African Americans' participation in higher education highlight the value of economic, structural, social, and cultural capital for African Americans (Freeman, 1997). Economic barriers include the fear that they cannot pay the short-term costs of attending and that the long-term economic benefits of attending will not exceed the costs. Structural barriers include the poor physical conditions of their schools and the lack of interest and assistance from their teachers and counselors. In terms of social capital, respondents described the need to believe at an early age that pursuing postsecondary education was a realistic option. The students also noted the importance of cultural awareness and African American role models (Freeman, 1997).

Based upon his comprehensive review and synthesis of prior research, Litten (1982) concluded that, compared with Whites, Blacks appear to start and finish the college decision making process later, conduct the process over a longer period of time, and consider attending a greater number of schools. While some researchers (Borus & Carpenter, 1984; St. John, 1991) have found comparable college enrollment rates across racial/ethnic groups after controlling for other differences including educational aspirations, others have shown that, compared with their White counterparts, Black high school students are less likely to enroll in college (Nolfi, et al, 1978) and less likely to attend highly selective colleges and universities (Hearn, 1984).

Blacks and Hispanics have been shown to be less likely than Whites to enroll in college largely because they have less of the attributes that are associated with college entry, such as family income, parents' education, and test scores (Jackson, 1990). Nonetheless, Jackson (1990) also found that college decision making processes differ across racial/ethnic groups. Although

the probability of college enrollment increased with test scores and grades regardless of race, the effect of high school grades among 1980 high school seniors was smaller for Hispanics than for Whites and Blacks. In terms of socioeconomic status measures, the probability of college enrollment increased with family income for Whites, increased with mother's education for Blacks and Whites, and increased with the number of siblings attending college for Hispanics and Whites (Jackson, 1990).

Research Method

This study uses quantitative analyses to explore the extent to which the relative influence on college investment decisions of economic, academic, structural, social, and cultural capital varies by racial/ethnic group. Two research questions are examined:

1. How does process of deciding to attend a four-year college or university in the fall after graduating from high school vary among Blacks, Hispanics, and Whites?
2. How does the process of deciding to attend a public two-year college in the fall after graduating from high school vary among Blacks, Hispanics, and Whites?

Data from the third (1994) follow-up to National Educational Longitudinal Study of 1988 8th graders (NELS:88) are used to examine the research questions. The sample used in these analyses is limited to individuals who graduated from high school in the spring of 1992. In order to correct for the influence of large sample sizes and the non-simple random sample design on standard errors, each case is weighted by the panel weight divided by the average weight for the sample. The weighted sample numbers 2,453,260 and the adjusted weighted sample numbers 11,933.

Descriptive and logistic regression analyses are used to examine the research questions. Descriptive statistics, including chi-square and ANOVA, are used to identify differences in the

amounts of various types of capital among White, Black, and Hispanic high school graduates. Logistic regression is used to isolate the effects of the independent variables on each of two dichotomous dependent variables: enrollment in a four-year college or university (yes/no) and enrollment in a public two-year college (yes/no). Because the two investment decisions are assumed to be independent, separate logistic regression models are tested for these two outcomes. In order to facilitate interpretation of the results, the regression coefficients were converted to first derivatives. First derivatives represent the net change in the probability of enrolling associated with a one unit change in the independent variables.

The hypothesized predictors of college investment decisions are drawn from the review of prior research and are based upon the variables available in the NELS:88 database. The independent variables include background characteristics (e.g., sex), as well as measures of economic, academic, structural, and social and cultural capital. Economic capital is measured by the socioeconomic status factor composite included in the NELS:88 database, a measure comprised of parents' education, income, occupation, and items in the home.

One measure of academic capital is the composite score on the reading and mathematics tests that are administered as part of the NELS data collection. Other measures of academic capital are participation in an academic curricular program (yes/no) and participation in an advanced placement program (yes/no). Measures of structural capital describe characteristics of the high school attended, such as control (public or private), location (urban, suburban, or rural), and the percent of Blacks and Hispanics in the student body. Data are imputed for the 14% of the cases that are missing data for the racial/ethnic composition of the student body using the average percent of Blacks and Hispanics in the student body for individuals of the same racial/ethnic group and socioeconomic status quartile.

The influence of a number of measures of social and cultural capital is examined. Parental encouragement is measured by mother's expectations for the student's educational attainment. Encouragement from peers is measured as the proportion of friends who are planning to attend a four-year college or university. Encouragement from other significant individuals ranges from 0 to 5 and is the number of the following individuals who wish the student to attend college: close friend, relative, teacher, guidance counselor, and/or coach. Educational expectations is a four-category variable: no more than high school, some college, finish college, and advanced degree. The importance of education and career is a factor comprised of the reported importance of each of the following NELS survey items: being successful in their line of work, finding steady employment, getting a good education, giving their children a better opportunity, and becoming an expert in their field (alpha reliability coefficient = 0.637). Assistance with college admissions requirements from high school personnel is a factor comprised of whether the student received help with college applications, financial aid applications, and/or writing essays (alpha reliability coefficient = 0.680). A final indicator of social and cultural capital is the extent to which the student used tools to prepare for college admissions examinations, such as classes offered by the school, private classes, books, videos, computer programs, and tutors.

Findings

The percent of high school graduates attending a four-year college or university in the fall after graduation ranged from 42.0% for Whites to 35.1% for Blacks to 25.6% for Hispanics. About one-fourth (23.0%) of Hispanic high school graduates were enrolled in public two-year colleges, compared with 17.7% of White and 14.6% of Black high school graduates.

Differences in capital among Blacks, Hispanics, and Whites

The amounts of various types of capital varied among White, Black, and Hispanic high school graduates. Table 1 shows that, on average, Blacks and Hispanics had less economic capital, as shown by their lower socioeconomic status (-0.31, -0.48, and 0.19, respectively). Black and Hispanic high school graduates also had less academic capital than their White peers. Average test scores were lower for Blacks and Hispanics than for Whites (45.1, 47.7, and 53.1). About one-third of Blacks (36.7%) and Hispanics (33.3%) participated in academic curricular programs, compared with nearly one-half (46.5%) of Whites.

Black high school graduates were observed to have more of some types of social and cultural capital than high school graduates of other racial/ethnic groups. About 36.5% of Blacks expected to earn advanced degrees, compared with 31.4% of Whites and 29.3% of Hispanics. Compared with Hispanics and Whites, Blacks received more help from their high schools with college admissions materials. About 40.2% of Blacks used more than one tool to prepare for college admissions tests, compared with only 26.3% of Hispanics and 23.9% of Whites. One-third (33.0%) of Black high school graduates had mothers who expected them to earn advanced degrees, compared with 29.6% of their Hispanic and 27.1% of their White peers.

In terms of structural capital, about one-half of Blacks (48.0%) and Hispanics (47.3%) graduated from urban high schools, compared with just one-fifth (21.3%) of Whites. Blacks and Hispanics attended high schools where, on average, more than one-half of all students were also Black or Hispanic (55.8% and 56.9%), whereas the average percent of Blacks and Hispanics in the schools attended by Whites was 11.9%.

Table 1. Characteristics of White, Black and Hispanic 1992 high school graduates

Characteristic	Total	White	Black	Hispanic	Statistical significance of differences
Adj. weighted n	11,933	8,737	1,378	1,141	
	100.0%	73.2%	11.6%	9.6%	
Fall 1992 educational status					$\chi^2 = 155$, df= 6, $p < .001$
Not enrolled	36.3%	34.7%	44.3%	44.0%	
Less than 4-year instn	5.9%	5.6%	6.1%	7.4%	
Public 2-year college	18.1%	17.7%	14.6%	23.0%	
4-year college or univ	39.7%	42.0%	35.1%	25.6%	
Female	50.1%	49.8%	51.7%	51.6%	$\chi^2 = 2.7$, df = 2, p = .27
Socioeconomic status	0.06	0.19	-0.31	-0.48	F = 624, df = 2, 11106, $p < .001$
Test score	51.6	53.1	45.1	47.7	F = 689, df = 2, 11138, $p < .001$
Academic curriculum	44.1%	46.5%	36.7%	33.3%	$\chi^2 = 104$, df =2, $p < .001$
Advanced placement	36.5%	36.2%	34.9%	36.3%	$\chi^2 = .88$, df = 2, p = .65
Others' encouragement	2.78	2.73	2.92	2.89	F = 9, df = 2, 11253, $p < .001$
Friends plan college	3.41	3.45	3.30	3.18	$\chi^2 = 84.3$, df = 8, $p < .001$
Mom expects bachelor	37.2%	40.0%	28.9%	30.5%	$\chi^2 = 90$, df = 2, $p < .001$
Mom expects adv. deg	28.8%	27.1%	33.0%	29.6%	$\chi^2 = 22$, df = 2, $p < .001$
Educational expectations					$\chi^2 = 32$, df = 6, $p < .001$
High school	9.4%	9.3%	8.4%	11.8%	
Some college	23.7%	23.6%	22.6%	27.2%	
Finish college	34.7%	35.6%	32.5%	31.7%	
Advanced degree	32.3%	31.4%	36.5%	29.3%	
Importance educ/work	0.00	-0.08	0.31	0.20	F = 119, df = 2, 11125, $p < .001$
HS help with college	0.00	-0.05	0.20	0.09	F = 46, df = 2, 11253, $p < .001$
Used 1 test prep tool	30.5%	31.2%	27.1%	28.6%	$\chi^2 = 11$, df = 2, $p < .01$
Used more than 1 tool	26.6%	23.9%	40.2%	26.3%	$\chi^2 = 164$, df = 2, $p < .001$
Urban high school	28.0%	21.3%	48.0%	47.3%	$\chi^2 = 689$, df = 2, $p < .001$
Rural high school	30.7%	34.1%	23.1%	20.6%	$\chi^2 = 136$, df = 2, $p < .001$
Public high school	89.9%	89.2%	93.9%	92.3%	$\chi^2 = 35$, df = 2, $p < .001$
Blacks/Hispanics in HS	22.0%	11.9%	55.8%	56.9%	F = 4785, df = 2, 11253, $p < .001$

Differences in predictors of enrolling in a four-year college or university

After controlling for differences in economic, academic, structural, social, and cultural capital, the probability of enrolling in a four-year college or university in the fall after graduating

from high school was 11.0% higher for Blacks than for Whites. Table 2 shows that Hispanics were as likely as Whites to enroll in a four-year college or university.

To determine whether the influence of particular independent variables on the probability of enrolling in a four-year college or university varied by racial/ethnic group, the logistic regression analyses were repeated by entering interactions for Black and Hispanic with each independent variable into the model one interaction at a time. Table 3 summarizes the interactions that significantly improved the model. Interpreting interactions is problematic when using logistic regression because the model is non-linear. In order to facilitate the interpretation of the differences in the influence of various independent variables among Blacks, Hispanics, and Whites, separate logistic regressions were conducted for each of these three racial/ethnic groups. Table 2 compares the increase in the probability of enrolling in a four-year college or university that is associated with a one-unit change in each independent variable for Blacks, Hispanics, and Whites. Appendices 1 and 2 show the coefficients for the total model and the three race-specific models.

Tables 2 and 3 suggest some important differences among Blacks, Hispanics, and Whites in the factors that influence the decision to enroll in a four-year college or university. First, after adjusting for the observed enrollment rates, the logistic regression model correctly predicts a higher percentage of four-year college enrollment decisions for Whites (79.8%) and Hispanics (77.9%) than for Blacks (73.1%). This difference suggests that the model is better for predicting four-year college enrollment for Whites and Hispanics than for Blacks.

Other differences pertain to the relative effects of various aspects of economic, academic, structural, social, and cultural capital. Socioeconomic status, a measure of economic capital, is an important predictor of four-year college enrollment regardless of race/ethnicity. But, socioeconomic status has a smaller effect on the probability of enrolling in a four-year college or

university for Blacks and Hispanics than for Whites. Test performance, a measure of academic capital, is one of the most important predictors of enrolling in a four-year college or university for Blacks, Hispanics, and Whites, but as a smaller positive effect on enrollment for Blacks than for Whites.

Several measures of social and cultural capital appear to be less important in the four-year college enrollment decision for Blacks than for Whites and Hispanics. Table 2 shows that the probability of enrolling in a four-year college or university is about 22% higher for Whites and Hispanics who expect to earn advanced degrees than for their peers of the same racial/ethnic group who expect no postsecondary education. In contrast, expecting to earn an advanced degree is unrelated to the probability of enrolling in a four-year college or university for Blacks.

Four-year enrollment rates are higher for Whites and Hispanics whose mothers expect them to earn at least a bachelor's degree than for their counterparts of the same racial/ethnic group whose mothers have lower expectations for their child's educational attainment. For Blacks, mothers' educational expectations increase the probability of enrolling in a four-year college or university only when the mother expects the individual to earn an advanced degree. Encouragement from significant others, such as a close friend, relative, teacher, counselor, and coach, increases the probability of enrolling in a four-year college or university for Whites and Hispanics but is unrelated to college enrollment for Blacks.

In terms of structural capital, the probability of enrolling in a four-year college or university increases with the percent of the high school student body comprised of Blacks and Hispanics for Black high school graduates. For Whites, four-year college enrollment rates decrease as the percent of Blacks and Hispanics in the student body increases. The racial/ethnic composition of the student body is unrelated to four-year college enrollment for Hispanics.

Table 2. Increase in the probability of enrolling in a four-year college or university in the fall after graduating from high school associated with a one unit change in each independent variable among Whites, Blacks, and Hispanics

Independent variable	Total	White	Black	Hispanic
Black	0.110 ***			
Hispanic	-0.024			
Other	-0.008			
Female	0.045 ***	0.037 *	0.110 **	-0.021
Socioeconomic status	0.105 ***	0.124 ***	0.087 **	0.042
Test score	0.019 ***	0.019 ***	0.014 ***	0.018 ***
Academic program	0.109 ***	0.115 ***	0.116 **	0.171 ***
Advanced placement	0.078 ***	0.071 ***	0.137 ***	0.034
Encouragement of others	0.036 ***	0.041 ***	0.017	0.033 *
Peers planning 4-year college	0.084 ***	0.084 ***	0.066 ***	0.089 ***
Mom expects bachelor's	0.131 ***	0.154 ***	-0.002	0.145 *
Mom expects advanced degree	0.105 ***	0.111 ***	0.129 **	0.148 *
Expect some college	-0.087 *	-0.067	-0.158 *	-0.066
Expect finish college	0.195 ***	0.204 ***	0.137	0.188 *
Expect advanced degree	0.217 ***	0.223 ***	0.050	0.223 **
Importance educ. & work	-0.011	-0.010	-0.050	-0.001
HS help with college	0.039 ***	0.036 ***	0.042 *	0.074 **
One test prep tool	0.049 **	0.040 *	0.058	0.032
More than one test prep tool	0.104 ***	0.104 ***	0.104 *	0.033
Urban HS	0.035 *	0.071 **	-0.064	0.049
Rural HS	0.071 ***	0.090 ***	0.028	0.079
Public high school	-0.015	-0.008	-0.156 *	0.013
% Black & Hispanic students	0.000	-0.002 ***	0.002 *	-0.001
% of predictions correct	78.4%	79.8%	73.1%	77.9%

Notes: The percent of correct predictions is adjusted for observed enrollment rate.
The net change in the probability of enrolling associated with a one unit change in each exogenous variable is represented by the first derivative. Derivatives are calculated using the equation $b = P^*(1-P^*)$, where b is the relevant coefficient and P^* is the estimated probability.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Statistically significant interactions between Black and Hispanic and independent variables for enrollment in a four-year college or university

Race group	Independent variable	Direction	Statistical significance
Black	Female	+	$p < .05$
	Socioeconomic status	-	$p < .05$
	Test score	-	$p < .05$
	Others' encouragement	-	$p < .05$
	Mom expects bachelor's	-	$p < .01$
	Expect advanced degree	-	$p < .01$
	Importance educ. & work	-	$p < .05$
	% Blacks/Hispanics	+	$p < .01$
Hispanic	Socioeconomic status	-	$p < .05$

Differences in predictors of enrolling in a public two-year college

After controlling for differences in economic, academic, structural, social, and cultural capital, the probability of enrolling in a public two-year college was 11.7% lower for Blacks than for Whites. In contrast, Table 4 shows that Hispanics were 5.4% more likely than Whites to enroll in public two-year colleges after graduating from high school.

As with the decision to enroll in a four-year college or university, the effects of a number of independent variables on the decision to enroll in a public two-year college varied by racial/ethnic group. Table 5 summarizes the statistically significant interactions that significantly improved the goodness of fit of the model. Appendices 3 and 4 show the coefficients for the total model and the three race-specific models.

The model correctly predicted whether a high school graduate would enroll in a public two-year college in only 57.9% of the cases (after adjusting for the observed enrollment rate). The model appears to be slightly better for predicting public two-year college enrollment for Blacks and Hispanics than for Whites, correctly predicting 62.5%, 61.3%, and 58.9% of the decisions, respectively.

The relatively low percent of correctly classified decisions limits the conclusions that may be drawn from these analyses. The results suggest, however, that the process for deciding to invest in a public two-year college varies by racial/ethnic group. An important area of variation pertains to the influence of structural capital. Attending a public rather than a private high school reduces the probability that the average Black high school graduate will enroll in a public two-year college by 21% but increases the probability of enrolling for the average Hispanic by 13.5%. The probability of enrolling in a public two-year college is positively related to the percent of Blacks and Hispanics in the high school student body for Whites, negatively

related for Hispanics, and unrelated for Blacks. Attending an urban rather than a suburban high school reduces the probability of enrolling by 12.7% for Blacks and 11.9% for Whites, but increases the probability of enrolling by 11.3% for Hispanics.

Table 4. Increase in the probability of enrolling in a public two-year college in the fall after graduating from high school associated with a one unit change in each independent variable among Whites, Blacks, and Hispanics

Independent variable	Total	White	Black	Hispanic
Black	-0.117 ***			
Hispanic	0.054 *			
Other	0.071 **			
Female	0.024	0.031 *	0.005	0.052
Socioeconomic status	0.033 **	0.021	0.039	0.109 ***
Test score	-0.009 ***	-0.008 ***	-0.010 ***	-0.009 **
Academic program	0.025	0.035 *	0.015	-0.062
Advanced placement	-0.070 ***	-0.059 ***	-0.055	-0.144
Encouragement of others	0.019 ***	0.019 ***	0.009	0.010
Peers planning 4-year college	-0.035 ***	-0.035 ***	-0.020	-0.028
Mom expects bachelor's	-0.013	-0.012	-0.058	-0.008
Mom expects advanced degree	-0.017	-0.039	-0.011	-0.027
Expect some college	0.179 ***	0.212 ***	0.064	0.066
Expect finish college	0.209 ***	0.220 ***	0.209 ***	0.109 .
Expect advanced degree	0.164 ***	0.195 ***	0.159 *	0.044
Importance education & work	0.005	0.002	-0.007	0.091 *
HS help with college	-0.001	-0.008	-0.009	0.036
One test prep tool	-0.008	0.020	-0.115 *	-0.020
More than one test tool	-0.037 *	-0.019	-0.116 *	0.017
Urban high school	-0.082 ***	-0.119 ***	-0.127 **	0.113 *
Rural high school	-0.040 **	-0.047 **	0.011	-0.034
Public high school	0.025	0.039	-0.210 ***	0.135 **
% Blacks & Hispanics	0.000	0.002 **	0.000	-0.003 **
% of predictions correct	57.9%	58.9%	62.5%	61.3%

Notes: The percent of correct predictions is adjusted for observed enrollment rate.
The net change in the probability of enrolling associated with a one unit change in each exogenous variable is represented by the first derivative. Derivatives are calculated using the equation $b = P^*(1-P^*)$, where b is the relevant coefficient and P^* is the estimated probability.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Statistically significant interactions between Black and Hispanic and independent variables for enrollment in a public two-year college

Race group	Independent variable	Direction	Statistical significance
Black	Academic curriculum	-	$p < .05$
	Advanced placement	-	$p < .05$
	Importance educ/work	+	$p < .05$
	HS help with college	+	$p < .05$
	Urban high school	+	$p < .001$
	Public high school	+	$p < .05$
	% Blacks & Hispanics	-	$p < .01$
Hispanic	Expect some college	-	$p < .01$
	Public high school	-	$p < .001$
	% Blacks & Hispanics	-	$p < .05$

Conclusions

At least four conclusions may be drawn from this research. First, the findings illustrate the merits of modeling college enrollment behavior as an investment decision in which students consider and apply various types of capital. The analyses clearly reveal that types of capital other than economic and academic influence college enrollment decisions for Black, Hispanic, and White high school graduates.

Second, the lower observed four-year college enrollment rates for Blacks and Hispanics than for Whites are largely explained by differences in the types of capital that are required for four-year college enrollment, particularly socioeconomic status and test scores. Only 35.1% of Blacks and 25.6% of Hispanics enrolled in a four-year college or university in the fall after graduating from high school, compared with 42.0% of Whites. After controlling for differences in economic, academic, structural, social, and cultural capital, Blacks were 11% more likely than Whites, and Hispanics were as likely as Whites to enroll in a four-year college or university.

Third, the analyses illustrate the importance of examining differences among racial/ethnic groups in the types of capital that influence college-related decisions. The process for deciding to invest in either a four-year or a public two-year college was shown to vary among

Blacks, Hispanics, and Whites. As an example, socioeconomic status had a stronger positive effect on the probability of enrolling in a four-year college or university for Whites than for Blacks or Hispanics.

Fourth, the differences in the four-year college enrollment process between Blacks and Whites appear to be larger than the differences between Hispanics and Whites. The model correctly predicted 80% of four-year college enrollment decisions for Whites, 78% for Hispanics, but only 73% for Blacks. Moreover, the number of statistically significant interactions with the independent variables in the model was greater for Blacks than for Whites.

Implications for Future Research

The findings also raise a number of areas for future research. First, future research should examine ways to improve the model used in these analyses in order to more accurately predict the decision to enroll in a public two-year college. The model tested in this study appears to be more appropriate for examining the decision to invest in a four-year college or university than the decision to invest in a public two-year college. The model correctly predicted 78% of the decisions to enroll in a four-year college or university, but only 58% of the decisions to enroll in a public two-year college. This suggests that the decision to enroll in a public two-year college is less patterned and predictable than the decision to enroll in a four-year college or university regardless of racial/ethnic group. Factors that were omitted from the model or not adequately measured by variables included in the model may also influence the decision to invest in education at a public two-year college.

The findings also point to the need for a qualitative approach to examining differences in college-related decision making processes across racial/ethnic groups. Such qualitative research methods are required to address a number of questions raised by this study that cannot be

adequately addressed by survey data alone. For example, how do structural characteristics of the high school influence college enrollment decisions? Why is the percent of Blacks and Hispanics in the high school positively related to the probability of enrolling in a four-year college or university for Blacks but negatively related for Whites? What is the influence on college enrollment decisions of factors that were not available to be included in the analyses, such as the college-activities of older siblings, parental involvement in the student's education, and "life events" (e.g., family death or illness, teenage pregnancy, parental unemployment)?

Compared with Whites and Hispanics, Blacks were observed to have more of various types of social and cultural capital, such as their own educational expectations, parental encouragement (as measured by mother's educational expectations), help from high school staff with college admissions materials, and use of admissions test preparation tools. Despite these advantages, several measures of social and cultural capital, including educational expectations, parental encouragement, and encouragement of other significant individuals, had smaller effects on the probability of enrolling in a four-year college or university for Blacks than for Whites. Future research should examine why these aspects of social and cultural capital were not as important in the four-year college enrollment decision for Blacks as they were for Hispanics and Whites. Perhaps these proxies for social and cultural capital do not reflect the same types of information sharing about college requirements for Blacks as for Whites and Hispanics.

Finally, the finding that test scores have a smaller effect on the probability of enrolling in a four-year college or university for Blacks than for Whites warrants further investigation. Black students may give less weight to their standardized test performance in their four-year college enrollment decision because, on average, their scores are lower than the scores of their majority peers at all levels of education and, as a result, they may have less confidence that the tests actually reflect their ability and potential. Nonetheless, recent legal challenges to affirmative

action arising in such states as California, Maryland, Texas, Georgia, Michigan, and Washington suggest that colleges and universities may increasingly rely upon criteria such as test scores in the admissions process. Future research should examine the ways in which this climate shift influences the college-related decision making of underrepresented minority groups such as African Americans, Hispanics, and Native Americans.

Appendix 1
Predictors of enrolling in a four-year college or university in the fall after graduating from high school among 1992 high school graduates

Independent variable	Coefficient	R	Exp(B)	Marginal
Black	0.466 ***	0.036	1.594	0.110
Hispanic	-0.097	0.000	0.908	-0.024
Other	-0.033	0.000	0.968	-0.008
Female	0.181 ***	0.026	1.198	0.045
Socioeconomic status	0.439 ***	0.086	1.551	0.105
Test score	0.075 ***	0.154	1.078	0.019
Academic program	0.461 ***	0.069	1.586	0.109
Advanced placement	0.320 ***	0.046	1.377	0.078
Encouragement of others	0.147 ***	0.075	1.158	0.036
Peers planning 4-year college	0.345 ***	0.096	1.412	0.084
Mom expects bachelor's degree	0.569 ***	0.058	1.766	0.131
Mom expects advanced degree	0.442 ***	0.041	1.556	0.105
Expect some college	-0.360 *	-0.017	0.697	-0.087
Expect finish college	0.985 ***	0.061	2.679	0.195
Expect advanced degree	1.259 ***	0.076	3.522	0.217
Importance education & work	-0.044	-0.006	0.957	-0.011
HS help with college	0.157 ***	0.047	1.170	0.039
One test prep tool	0.197 **	0.023	1.218	0.049
More than one test prep tool	0.435 ***	0.053	1.544	0.104
Urban HS	0.143 *	0.012	1.153	0.035
Rural HS	0.290 ***	0.036	1.337	0.071
Public high school	-0.058	0.000	0.943	-0.015
% Blacks/Hispanics in HS	-0.001	0.000	0.999	0.000

% of predictions correct = 78.4%

Notes: The percent of correct predictions is adjusted for non-50% observed distribution.

The coefficient is the net effect of the independent variable on the log of the probability of enrolling in a four-year college or university in the fall after high school graduation.

The marginal is interpreted as the net change in the probability of enrolling in a four-year college or university associated with a 1 one unit change in the independent variables.

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix 2
Predictors of enrolling in a four-year college or university in the fall after graduating from high school by racial/ethnic group

	White		Black		Hispanic	
Independent variable	Coefficient	R	Coefficient	R	Coefficient	R
Female	0.149*	0.019	0.463**	0.068	-0.085	0.000
Socioeconomic status	0.531***	0.098	0.357**	0.069	0.168	0.000
Test score	0.076***	0.149	0.057***	0.127	0.072***	0.149
Academic program	0.488***	0.072	0.491**	0.068	0.799***	0.115
Advanced placement	0.290***	0.040	0.597***	0.090	0.135	0.000
Encouragement of others	0.164***	0.084	0.070	0.000	0.136*	0.047
Peers planning 4-year college	0.346***	0.091	0.270***	0.083	0.368***	0.106
Mom expects bachelor's deg.	0.691***	0.067	-0.009	0.000	0.643*	0.057
Mom expects advanced deg.	0.470***	0.040	0.558**	0.056	0.656*	0.056
Expect some college	-0.274	-0.006	-0.718*	-0.035	-0.270	0.000
Expect finish college	1.075***	0.062	0.599	0.030	0.925*	0.040
Expect advanced degree	1.436***	0.080	0.201	0.000	1.467**	0.080
Importance education/work	-0.039	0.000	-0.203	-0.025	-0.003	0.000
HS help with college	0.144***	0.041	0.171*	0.046	0.303**	0.089
One test prep tool	0.163*	0.017	0.235	0.000	0.127	0.000
More than one test tool	0.435***	0.051	0.438*	0.043	0.133	0.000
Urban	0.291**	0.028	-0.261	-0.007	0.199	0.000
Rural	0.374***	0.048	0.112	0.000	0.324	0.000
Public high school	-0.032	0.000	-0.703*	-0.046	0.052	0.000
% Black & Hispanic students	-0.008***	-0.033	0.007*	0.053	-0.004	0.000
% of predictions correct	79.8%		73.1%		77.9%	

Notes: The percent of correct predictions is adjusted for observed enrollment rate.
The coefficient is the net effect of the independent variable on the log of the probability of enrolling in a four-year college or university in the fall after high school graduation.
* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix 3
Predictors of enrolling in public two-year college
in the fall after graduating from high school among 1992 high school graduates

Independent variable	Coefficient	R	Exp(B)	Marginal
Black	-0.498 ***	-0.043	0.608	-0.117
Hispanic	0.220 *	0.016	1.246	0.054
Other	0.288 **	0.022	1.334	0.071
Female	0.097	0.012	1.102	0.024
Socioeconomic status	0.133 **	0.028	1.142	0.033
Test score	-0.036 ***	-0.093	0.965	-0.009
Academic program	0.102	0.010	1.107	0.025
Advanced placement	-0.286 ***	-0.044	0.751	-0.070
Encouragement of others	0.078 ***	0.046	1.081	0.019
Peers planning 4-year college	-0.139 ***	-0.049	0.870	-0.035
Mom expects bachelor's	-0.054	0.000	0.948	-0.013
Mom expects advanced degree	-0.066	0.000	0.936	-0.017
Expect some college	0.858 ***	0.071	2.359	0.179
Expect finish college	1.138 ***	0.088	3.120	0.209
Expect advanced degree	0.755 ***	0.053	2.127	0.164
Importance education & work	0.020	0.000	1.020	0.005
HS help with college	-0.005	0.000	0.995	-0.001
One test prep tool	-0.032	0.000	0.969	-0.008
More than one test tool	-0.149 *	-0.016	0.862	-0.037
Urban high school	-0.339 ***	-0.044	0.712	-0.082
Rural high school	-0.160 **	-0.022	0.852	-0.040
Public high school	0.098	0.000	1.103	0.025
% Blacks & Hispanics	0.001	0.000	1.001	0.000

% of predictions correct = 57.9%

Notes: The percent of correct predictions is adjusted for observed enrollment rate.
The coefficient is the net effect of the independent variable on the log of the probability of enrolling in a four-year college or university in the fall after high school graduation.
The marginal is interpreted as the net change in the probability of enrolling in a four-year college or university associated with a one unit change in the independent variables.
* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix 4
Predictors of enrolling in public two-year college
in the fall after graduating from high school by racial/ethnic group

	White		Black		Hispanic	
Independent variable	Coefficient	R	Coefficient	R	Coefficient	R
Female	0.124*	0.017	0.020	0.000	0.212	0.000
Socioeconomic status	0.083	0.009	0.157	0.000	0.461***	0.095
Test score	-0.033***	-0.085	-0.041***	-0.093	-0.038**	-0.079
Academic program	0.142*	0.017	0.062	0.000	-0.251	0.000
Advanced placement	-0.241***	-0.035	-0.221	0.000	-0.637	-0.083
Encouragement of others	0.077***	0.045	0.036	0.000	0.041	0.000
Peers planning 4-year college	-0.142***	-0.047	-0.082	0.000	-0.111	0.000
Mom expects bachelor's deg.	-0.048	0.000	-0.236	0.000	-0.031	0.000
Mom expects advanced deg.	-0.158	-0.006	-0.046	0.000	-0.107	0.000
Expect some college	1.177***	0.090	0.258	0.000	0.267	0.000
Expect finish college	1.330***	0.094	1.130***	0.098	0.461	0.000
Expect advanced degree	0.984***	0.063	0.726*	0.047	0.178	0.000
Importance education/work	0.007	0.000	-0.028	0.000	0.376*	0.057
HS help with college	-0.030	0.000	-0.038	0.000	0.146	0.030
One test prep tool	0.082	0.000	-0.488*	-0.063	-0.082	0.000
More than one test tool	-0.078	0.000	-0.491*	-0.058	0.068	0.000
Urban high school	-0.509***	-0.060	-0.545**	-0.070	0.478*	0.054
Rural high school	-0.192**	-0.028	0.044	0.000	-0.137	0.000
Public high school	0.158	0.000	-1.147***	-0.115	3.000**	0.082
% Blacks & Hispanics	0.008***	0.043	0.000	0.000	-0.011**	-0.092
% of predictions correct	57.9%		62.5%		61.3%	

Notes: The percent of correct predictions is adjusted for observed enrollment rate.
The coefficient is the net effect of the independent variable on the log of the probability of enrolling in a four-year college or university in the fall after high school graduation.
* $p < .05$, ** $p < .01$, *** $p < .001$

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